

AMENDMENTS TO THE CLAIMS

The following list of claims will replace all prior versions and listings of claims in the application:

Claims:

1. (Currently Amended) Stretching apparatus for use in stretching the lower limbs of a human subject said apparatus comprising:

~~at least one cradle~~ first and second cradles each independently movable and each configured to support a leg, or part thereof, of said subject, each said cradle being movable between a corresponding respective non-stretching position and a corresponding respective stretching position; and

at least one cradle movement means operable to independently move each said cradle between said non stretching and stretching positions, said at least one cradle movement means comprising:

~~wherein said cradle movement means comprises:~~

first movement means configured to ~~move~~ rotate each said cradle ~~through a~~ in a corresponding respective first plane of movement; and

second movement means configured to rotate each said cradle ~~through a~~ in a corresponding respective second plane of movement transverse to a said first plane of movement.

2. (Currently Amended) Stretching apparatus as claimed in claim 1, wherein each said cradle is attached to ~~a respective~~ said cradle movement means at a first end of said cradle, said cradle extending from the connected cradle movement means to a second end.

3. (Currently Amended) Stretching apparatus as claimed in claim ~~1 or 2~~, wherein a said cradle comprises a first portion configured to support a portion of the subject's leg below the subject's knee, a second portion configured to support the subject's leg above the knee, and a hinge connecting said first and second portions.

4. (Currently Amended) Stretching apparatus as claimed in claim ~~3~~1, wherein a said first and second portions cradle comprises a first portion configured to support a portion of the subject's leg below the subject's knee, a second portion configured to support the subject's leg above the knee, and a hinge connecting said first and second portions, and said first and second portions are movable about said hinge to position the subject's leg in either a straight or a bent position.

5. (Currently Amended) Stretching apparatus as claimed in ~~any of claims 1 to~~ 4, wherein a said cradle further comprises means to adjust the cradle length.

6. (Currently Amended) Stretching apparatus as claimed in claim ~~5~~1 , wherein a said cradle further comprises means to adjust the cradle length, said means to adjust the cradle length comprisesing a guide slot having a plurality of notches forming a plurality of adjustment positions; and

a portion of said cradle comprises positioning means configured to locate in said notches,

wherein said cradle length is slideably adjustable by movement of said positioning means between said notches.

7. (Currently Amended) Stretching apparatus as claimed in ~~any of claims 1 to~~ 6, wherein a said cradle forms a channel configured to receive the subject's leg.

8. (Currently Amended) Stretching apparatus as claimed in claim 71, wherein a said cradle forms a channel configured to receive the subject's leg, and further comprising at least one fastening strap arranged to fasten across said channel and said subject's leg contained therein.

9. (Currently Amended) Stretching apparatus as claimed in ~~any of claims 13 to~~ 8, wherein a said cradle comprises a first portion configured to support a portion of the subject's leg below the subject's knee, a second portion configured to support the subject's leg above the knee, and a hinge connecting said first and second portions, and further comprising a locking means extending between said first and second cradle portions, said locking means arranged to releasably lock said cradle in a selected configuration.

10. (Currently Amended) Stretching apparatus as claimed in claim 91, wherein a said locking means comprises a latch member cradle comprises a first portion configured to support a portion of the subject's leg below the subject's knee, a second portion configured to support the subject's leg above the knee, and a hinge connecting said first and second portions, and further comprising a latch member extending between said first and second cradle portions, said latch member arranged to releasably lock said cradle in a selected configuration.

11. (Currently Amended) Stretching apparatus as claimed in claim 91, wherein a said locking means comprises a spring loaded plunger. cradle comprises a first portion configured to support a portion of the subject's leg below the subject's knee, a second portion configured to support the subject's leg above the knee, and a hinge connecting said first and second portions, and further comprising a spring loaded plunger extending between said first and second cradle portions, said spring loaded plunger arranged to releasably lock said cradle in a selected configuration.

12. (Currently Amended) Stretching apparatus as claimed in claims ~~1, to 11~~ wherein ~~a said~~ first movement means comprises a first bearing and axle member connected to one end of a ~~respective~~ said cradle, rotation of said axle member about said first bearing being operable for operating raising or lowering of said cradle.

13. (Currently Amended) Stretching apparatus as claimed in ~~any of claims 12 and 131~~, wherein said second movement means comprises a second bearing arranged such that rotation of said second bearing operates rotation of ~~an attached~~ a said cradle in through a plane of constant height.

14. (Currently Amended) Stretching apparatus as claimed in claims ~~12 and 13~~, wherein ~~said first and second bearings rotate through said first and second planes of movement, each said plane of movement offset to the other by 90°~~ wherein:

a first movement means comprises a first bearing and axle member connected to one end of a said cradle, rotation of said axle member about said first bearing being operable for raising or lowering of said cradle;

said second movement means comprises a second bearing arranged such that rotation of said second bearing operates rotation of a said cradle in a plane of constant height; and

wherein said first and second bearings rotate in said first and second planes of movement, each said plane of movement being offset to the other by 90°.

15. (Currently Amended) Stretching apparatus as claimed in ~~any preceding claim 1~~, wherein said cradle movement means comprises at least one ratchet operable to maintain a said movement means and a connected said cradle in a selected position.

16. (Currently Amended) Stretching apparatus as claimed in claim 15, wherein said cradle movement means comprises at least one ratchet operable to

maintain a said movement means and a connected said cradle in a selected position, wherein said ratchet provides a fine control mechanism for controlling a position of a said cradle during stretching.

17. (Currently Amended) Stretching apparatus as claimed in ~~any preceding~~ claim 1, wherein ~~a~~ said cradle movement means further comprises a damping mechanism configured to dampen return movement of a said cradle from a stretching position to a non-stretching position.

18. (Currently Amended) Stretching apparatus as claimed in ~~any preceding~~ claim 1, wherein said cradle movement means further comprises locking means arranged to maintain ~~a said~~ an attached said cradle in a first selected position, said locking means releasable to enable movement of said cradle to a second selected position.

19. (Currently Amended) Stretching apparatus as claimed in ~~any preceding~~ claim 1, wherein said cradle movement means further comprises means to measure the movement of a said cradle ~~through~~ in a said plane of movement.

20. (Currently Amended) Stretching apparatus as claimed in ~~any preceding~~ claim 1, wherein said cradle movement means comprises a handle portion operable for movement of a said cradle in said first and second planes of movement.

21. (Currently Amended) Stretching apparatus as claimed in ~~any preceding~~ claim 1, wherein said cradle movement means further comprises a height adjustment mechanism.

22. (Currently Amended) Stretching apparatus as claimed in claim ~~4~~21, wherein said cradle movement means further comprises a height adjustment mechanism which is adjustable to align an axis extending through the subject's hip joints with ~~the~~ an axis of rotation of said first movement means.

23. (Currently Amended) Stretching apparatus as claimed in ~~any preceding~~ claim 1, wherein said apparatus comprises two cradle movement means, each connected to a separate said cradle, wherein a frame portion extends between said cradle movement means.

24. (Currently Amended) Stretching apparatus as claimed in claim ~~23~~1, wherein ~~each~~ said apparatus comprises two cradle movement means, each connected to a separate said cradle, wherein a frame portion extends between said cradle movement means, wherein each said cradle movement means is slideably mounted on said frame portion, said frame portion further comprising adjustment means arranged to adjust the mounting position of each said cradle movement means and thereby to adjust the width between said cradle movement means.

25. (Currently Amended) Stretching apparatus as claimed in ~~any preceding~~ claim 1, wherein ~~support means is provided to support at least one cradle in a position of 0° flexion.~~ each said cradle comprises a support leg hingeably mounted at one end of said leg at the underside of a portion of said cradle and a castor attached at a second end of the leg such that said castor is in contact with a ground surface when said cradle in a position of 0° flexion.

26. (Currently Amended) Stretching apparatus as claimed in ~~any preceding~~ claim 1, wherein each said cradle ~~comprises a support leg hingeably mounted at one end of said leg at the underside of a port of said cradle and configured to support said cradle in a position of 0° flexion.~~ movement means is slideably mounted on said frame portion, said frame portion further comprising adjustment means arranged to adjust the mounting position of each said cradle movement means and thereby the width between said cradle movement means, wherein support means is provided to support at least one said cradle in a position of 0° flexion.

27. (Currently Amended) Stretching apparatus as claimed in claim 26~~1~~, wherein:

~~each~~ said support leg further comprises a castor at a second end of said leg arranged to permit movement of said leg across a ground surface whilst supporting said cradle cradle movement means is slideably mounted on said frame portion, said frame portion further comprising adjustment means arranged to adjust the mounting position of each said cradle movement means and thereby the width between said cradle movement means, wherein support means is provided to support at least one said cradle in a position of 0° flexion;

said support means comprising:

an arm configured to connect said cradle to said cradle movement means;

at least one selected from the set of a roller, castor or stub, extending substantially transverse to a main underside of said arm; and

a support surface;

wherein when said cradle is in a position of 0° flexion, said one selected from a roller, castor or stub is in contact with said support surface.

28. Stretching apparatus as claimed in claim 25~~1~~, wherein ~~said support means comprises:~~ each said cradle comprises a support leg hingeably mounted at one end of said leg at the underside of a portion of said cradle and a castor attached at a second end of the leg such that said castor is in contact with a ground surface when said cradle is in a position of 0° flexion, said support means comprising a support bar, said support bar configured to be in contact with a lower surface of said cradle when said cradle is in said position of 0° flexion.

~~an arm configured to connect said cradle to said cradle movement means;~~

~~at least one roller, castor or stub extending substantially transverse to a main underside of said arm;~~

~~a support surface;~~

~~wherein when said cradle is in a position of 0° flexion, said roller, castor or stub is in contact with said support surface.~~

29. (Currently Amended) Stretching apparatus as claimed in claim ~~29~~1, wherein said support means ~~comprises a support bar, said support bar configured to be in contact with a lower surface of at least one cradle~~ comprises at least one roller mounted at the underside of a portion of said cradle such that said roller is in contact with a support surface when said cradle is in a position of 0° flexion.

30. (Currently Amended) Stretching apparatus as claimed in ~~any one of claims 1 to 26, claim 1,~~ wherein each said cradle comprises ~~a support arm mounted at one end of said arm~~ at least one castor mounted at the underside of a portion of said cradle and ~~configured to provide contact at another end of said support arm with a support surface~~ such that said castor is in contact with a support surface, thereby supporting when said cradle is in a position of 0° flexion.

31. (Currently Amended) Stretching apparatus as claimed in ~~any preceding claim 1,~~ further comprising a table arranged to support the upper body of said subject and connected to said apparatus at one end to support a subject in a supine position.

32. (Currently Amended) Stretching apparatus as claimed in claim ~~31~~1, further comprising a table arranged to support the upper body of said subject and connected to said apparatus at one end to support a subject in a supine position,

wherein a distance between said table and said apparatus is adjustable in a horizontal plane.

33. (Currently Amended) Stretching apparatus as claimed in ~~claim 31 or claim 32~~ claim 1, further comprising a table arranged to support the upper body of said subject and connected to said apparatus at one end to support a subject in a supine position, wherein a distance between said table and said apparatus is adjustable in a vertical plane.

34. (Currently Amended) Stretching apparatus as claimed in ~~any one of claims 31 to 33~~, claim 1, further comprising a table arranged to support the upper body of said subject and connected to said apparatus at one end to support a subject in a supine position wherein said apparatus further comprises a pelvic clamp comprising at least one clamping member movable to engage at the pelvis of a subject positioned in supine position on said apparatus, said clamp adjustable to tighten around the subject's pelvis.

35. (Currently Amended) Stretching apparatus as claimed in ~~claim 34~~, wherein said further comprising a table arranged to support the upper body of said subject and connected to said apparatus at one end to support a subject in a supine position wherein said apparatus further comprises a pelvic clamp comprising at least one clamping member movable to engage at the pelvis of a subject positioned in supine position on said apparatus, said clamp adjustable to tighten around the subject's pelvis, and said clamping member is shaped to surround the pelvic iliac crests of a human subject.

36. (Currently Amended) Stretching apparatus as claimed in ~~any preceding claim 1~~, wherein said cradle movement is supported in use by a cradle movement means support surface, for use in performing one or more stretches of muscle and soft tissue surrounding the human hip joint, said one or more stretches selected from the set comprising:

extension stretching; and/or
flexion stretching; and/or
medial rotation stretching; and/or
lateral rotation stretching; and/or
adduction stretching; and/or
abduction stretching.

37. (Currently Amended) Stretching apparatus as claimed in ~~any preceding~~ claim 1, comprising:

a support table configured to support said subject's back and upper body in a supine position;

said at least one cradle movement means being operable by said subject from said supine position to move said cradles between a non-stretching position and a stretching position.

~~for use in performing one or more stretches of muscle and soft tissue surrounding the human hip joint taken from the seat of:~~

- ~~• extension stretching;~~
- ~~• flexion stretching;~~
- ~~• medial rotation stretching;~~
- ~~• lateral rotation stretching;~~
- ~~• adduction stretching;~~
- ~~• abduction stretching.~~

38. (Currently Amended) Stretching apparatus ~~for use in stretching the lower limbs of a human subject~~ as claimed in claim 1, comprising:

a support table configured to support said subject's back and upper body in a supine position;

said at least one cradle movement means being operable by said subject from said supine position to move said cradles between a non-stretching position and a stretching position; and

each said cradle is independently movable by a separate said cradle movement means.

~~at least one cradle configured to support a leg, or part thereof, of said subject, said cradle moveable between a non-stretching position and a stretching position, in use said cradle thereby positioning said leg, or part thereof, in said non-stretching and stretching positions respectively; and~~

~~at least one cradle movement means operable to move said cradle between said non-stretching and stretching positions, in use said cradle movement means thereby moving said leg, or part thereof, between said non-stretching and stretching positions;~~

~~wherein said cradle movement means comprises;~~

~~first movement means configured to move said cradle through a first plane of movement for performing a first set of stretches; and~~

~~second movement means configured to rotate said cradle through a second plane of movement transverse to said first plane of movement for performing a second set of stretches.~~

39. (Currently Amended) ~~Stretching apparatus for use in stretching the lower limbs of a human subject~~ as claimed in claim 1, comprising:

a support table configured to support said subject's back and upper body in a supine position;

~~at least one cradle extending from one of said table, said cradle configured to support a leg, or part thereof, of said subject, said cradle moveable between a non-stretching position and a stretching position; and~~

said at least one cradle movement means being operable by said subject from said supine position to move said cradles between a non-stretching position and a stretching position; and

wherein each said cradle movement means ~~comprises~~ is located in the region of one end of a respective said cradle so as to locate each said cradle movement means in use adjacent said subject's respective hip joints.

~~first movement means configured to move said cradle through a first plane of movement for performing a first set of stretches; and~~

~~second movement means configured to rotate said cradle through a second plane of movement transverse to said first plane of movement for performing a second set of stretches.~~

40. (Currently Amended) Stretching apparatus as claimed in claim ~~39~~1, wherein ~~two said cradles are provided, said cradles configured to support first and second legs, or parts thereof, of said subject respectively, each said cradle independently moveable by a separate said cradle movement means.~~ comprising:

a support table configured to support said subject's back and upper body in a supine position;

said at least one cradle movement means being operable by said subject from said supine position to move said cradles between a non-stretching position and a stretching position, and further comprising a clamp arranged to engage at the pelvis of a subject positioned on said apparatus in said supine position.

41. (Currently Amended) Stretching apparatus as claimed in ~~claim 39 or 40,~~ wherein ~~each said cradle movement means is located in the region of one end of said cradle respectively so as to locate each said cradle movement means in use adjacent said subject's respective hip joints.~~ claim 1, comprising:

a support table configured to support said subject's back and upper body in a supine position;

said at least one cradle movement means being operable by said subject from said supine position to move said cradles between a non-stretching position and a stretching position, and further comprising

a clamp arranged to engage at the pelvis of a subject positioned on said apparatus in said supine position;

wherein said clamp comprises first and second clamping members arranged on opposite long sides of said table and means to urge said members together.

42. (Currently Amended) Stretching apparatus as claimed in ~~any of claims 39 to 41~~ claim 1, wherein said apparatus further comprising a clamp arranged to engage at the pelvis of a subject positioned on said apparatus in said supine position. cradle movement is supported in use by a cradle movement means support surface.

43. (Currently Amended) Stretching apparatus ~~as claimed in claim 42,~~ wherein ~~said clamp comprises first and second clamping members arranged on opposite long sides of said table and means to urge said members together.~~ for use in

performing controlled stretching of the muscles and soft tissues associated with the human hip joint, said apparatus comprising:

said apparatus comprising:

first and second cradles each independently movable and each configured to support a leg, or part thereof, of said subject, each said cradle being movable between a corresponding respective non-stretching position and a corresponding respective stretching position; and

at least one cradle movement means operable to independently move each said cradle between said non-stretching and stretching positions, said at least one cradle movement means comprising:

first movement means configured to rotate each said cradle in a corresponding respective first plane of movement;

second movement means configured to rotate each said cradle in a corresponding respective second plane of movement transverse to a said first plane of movement,

two independently movable cradles each for use in positioning a subject's leg during stretching, each cradle movable between a stretching and non-stretching position; and

two cradle movement means each connected to a corresponding respective said cradle, each said cradle movement means having first and second pivots forming first and second axes of rotation, said cradle movement means operable to independently move said connected cradle in corresponding first and second planes of movement,

wherein movement in said first plane causes a movement of said support in a sagittal plane with respect to a human subject and movement in said second plane causes a rotation of each portion of said support in a coronal plane with respect to a human subject.

44. (Currently Amended) Stretching apparatus for use in performing controlled stretching of the muscles and soft tissues associated with the human hip joint, comprising: abduction and/or adduction stretching of a human subject's thigh adductor and/or abductor muscles respectively, said apparatus comprising:

first and second cradles each independently movable and each configured to support a leg, or part thereof, of said subject, each said cradle being movable between a corresponding respective non-stretching position and a corresponding respective stretching position; and

at least one cradle movement means operable to independently move each said cradle between said non stretching and stretching positions, said at least one cradle movement means comprising:

first movement means configured to rotate each said cradle in a corresponding respective first plane of movement; and

second movement means configured to rotate each said cradle in a corresponding respective second plane of movement transverse to a said first plane of movement, wherein:

said first and second cradles are each configured to support a leg, or part thereof, of said subject such that said leg is held substantially in an extended position, each said cradle rotatable in a plane of; and

at least one cradle movement means operable to rotate a said cradle about an axis of rotation and in a said plane of movement so as to move said leg across and/or away from a midline of said subject's body to perform adduction and/or abduction stretches of the subject's leg respectively.

~~two leg supports each for use in positioning a subject's leg during stretching, each leg support moveable between a stretching and non-stretching position and connected to:~~

~~a leg support movement means, each said leg support movement means having first and second pivots forming first and second axes of rotation, said leg support movement means operable to independently move said connected leg support through corresponding first and second planes of movement;~~

~~wherein movement in said first plane causes a movement of said support in a sagittal plane with respect to human subject and movement in said second plane causes a rotation of each portion of said support in a coronal plane with respect to human subject.~~

45. (Currently Amended) ~~Stretching apparatus for use in performing abduction and/or adduction stretching of a human subject's thigh adductor and/or abductor muscles respectively, comprising:~~as claimed in claim 44, wherein when said human subject is substantially in the anatomical position, said plane of movement is substantially the coronal plane with respect to said human subject.

~~at least one cradle configured to support a leg, or part thereof, of said subject such that said leg is held substantially in extended position, said cradle rotatable through a plane of movement; and~~

~~at least one cradle movement means operable to rotate said cradle about an axis of rotation and through said plane of movement so as to move said leg across and/or~~

~~away from a midline of a subject's body to perform adduction and/or abduction stretches of the subject's leg respectively.~~

46. (Currently Amended) Stretching apparatus as claimed in claim 4544, wherein when said human ~~subject is~~subject's hips are substantially in the anatomical a position of 90° flexion, said plane of movement is substantially the ~~coronal~~transverse plane with respect to said human subject.

47. (Currently Amended) Stretching apparatus for use in performing medial or lateral rotation stretching of a human subject's thigh lateral rotator or medial rotator muscles respectively, said apparatus comprising:

first and second cradles each independently movable and each configured to support a leg, or part thereof, of said subject, each said cradle being movable between a corresponding respective non-stretching position and a corresponding respective stretching position; and

at least one cradle movement means operable to independently move each said cradle between said non-stretching and stretching positions, said at least one cradle movement means comprising:

first movement means configured to rotate each said cradle in a corresponding respective first plane of movement; and

second movement means configured to rotate each said cradle in a corresponding respective second plane of movement transverse to a said first plane of movement, wherein:

at least one said cradle is configured to support a leg, or part thereof, in a position such that the thigh of the supported leg is substantially orthogonal to the subject's upper body, said cradle being rotatable about an axis of rotation so as to move a portion of

said supported leg in a direction across or away from a midline of the subject's body to perform lateral rotation or medial rotation stretches respectively; and

said at least one cradle movement means being operable to rotate said cradle about said axis of rotation, wherein in use, said axis is arranged to be substantially coincident with an axis extending through a subject's respective hip joint and knee joint.

~~as claimed in claim 45, wherein when said human subject's hips are substantially in a position of 90° flexion, said plane of movement is substantially the transverse plane with respect to said human subject.~~

48. (Cancelled)

49. (Cancelled)